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NOTES ON AMERICAN CRAB SPIDERS (THOMISIDAE)

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Most of the common crab spiders of the United States were described by Keyserling in the first volume of his magnificent work on American spiders, 'Die Spinnen Amerikas,' published in 1880. In spite of the clear-cut descriptions and the good figures, many forms have been redescribed subsequently and are still known by these later names. Many of the changes in specific nomenclature proposed in the following pages are directly due to a reconsideration of Keyserling's species. A study of practically all the types of the Thomisidae that are deposited in Museums in the United States has cleared up the identity of many obscure species and has aided in placing those described during the last decade. Only those species are mentioned in which some important taxonomical change has been deemed necessary. In addition, a few forms have been regarded as new and are described in this paper.

The specific identity of many of our American spiders with European species is well known. Through the courtesy of Dr. E. Schenkel of Switzerland and M. L. Fage of France, nearly forty species of European Thomisidae have been made available to me for comparison with spiders of the family from the United States. While in the main the study has served to verify previous identifications, some other species have been added to the list and their synonymies noted. A study of the European *Coriarachne depressa* shows that the American species are fully congeneric and are not referable to a distinct generic category. *Platyxysticus* becomes a synonym of *Coriarachne*. The following list is doubtless far from complete and many other species may well be expected to be endemic to both the Nearctic and Palearctic regions.

Philodromus aureolus (Olivier), 1789, (*P. canadensis* Emerton, 1917).

Philodromus rufus Walckenaer, 1825, (*P. pictus* Emerton, 1892).

Philodromus alascensis Keyserling, 1883, (*P. varians* Kulczynski, 1908).

Thanatus coloradensis Keyserling, 1880, (*T. alpinus* Kulczynski, 1887).

Thanatus formicinus (Olivier), 1789, "Greenland."

Tibellus oblongus (Walckenaer), 1802, (not *T. duttoni* Hentz, 1847).

Tibellus maritimus (Menge), 1874, (*T. oblongus* Simon, not auct.).

Misumena calycina (Linnaeus), 1758, (*M. vatia* Clerck, 1757).

THOMISIDAE

Xysticus C. Koch*Xysticus verecundus*, new species

Figures 1 and 2

MALE.—Total length, 3.46 mm. Carapace black, with only a faint indication of a lighter median longitudinal band, completely lacking any lateral or marginal stripes and markings. Eye tubercles black. Sternum, labium, maxillae, basal leg joints and the femora and patellae of the first two pairs of legs black. Tibiae basally darkened, the remainder of that joint and the distal ones brownish. The last two pairs of legs maculate in black and white, the femora nearly black, the metatarsi and tarsi yellowish brown. Abdomen showing no pattern, nearly black, with a few lighter round maculations.

	CARAPACE	FRONT	STERNUM	LABIUM	ENDITE	ABDOMEN
Length	1.73	.46	.80	.36	.46	1.66 mm.
Width	1.73	.93	.76	.26	.26	1.63 mm.

Eye rows recurved, the first narrower than the second in the ratio 36: 40. Ratio of the eyes: ALE: AME: PLE: PME = 7: 4: 5: 3. Anterior median eyes separated by about two diameters, half as far from the much larger laterals. Posterior median eyes separated by nearly three diameters, much farther from the laterals (8/12). Median ocular quadrangle very slightly broader in front, as long as broad, the anterior eyes slightly larger and scarcely two diameters from the clypeal margin.

The first two pairs of legs equal in length, the last two approximately so, all heavily spined, the first two tibiae with 1-2-2-2 beneath, the metatarsi, 2-2-2.

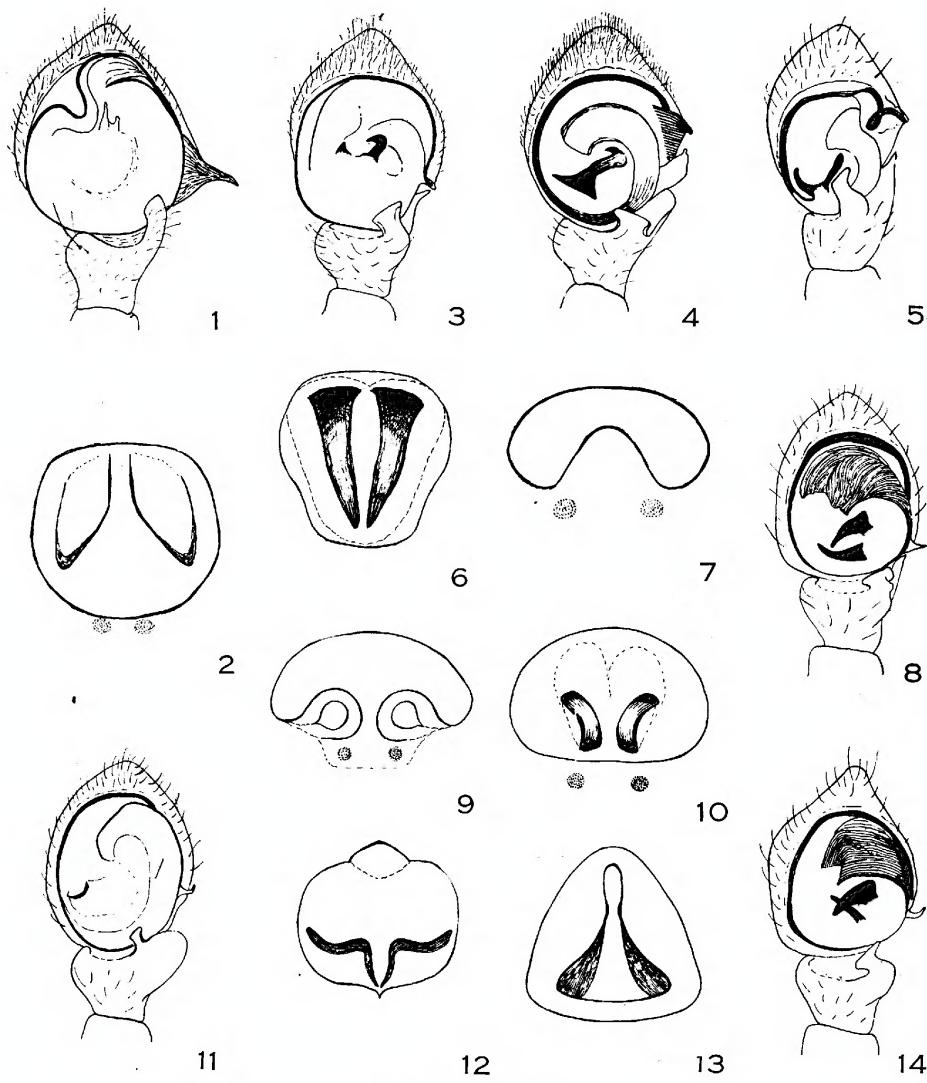
	FEMUR	PATELLA	TIBIA	METATARSUS	TARSUS	TOTAL
I	1.60	.76	1.16	1.10	.76	5.38 mm.
II	1.60	.76	1.16	1.10	.76	5.38 mm.
III	1.10	.46	.83	.56	.53	3.48 mm.
IV	1.10	.46	.83	.66	.56	3.61 mm.

Ratio of coxae I: II: III: IV = 1.7: 1.6: 1.4: 1.5.

Femur of male palpus about as long as the patella and tibia taken together, a little shorter than the tarsus. Tibia completely lacking the customary prolateral apophysis, the ventral one a moderately stout spur curved laterad. Tarsus about as broad as long, the bulbal elements simple, lacking the lower apophysis, the upper one gone or represented by a small fold. Embolus a fine tube on the prolateral side, terminating in the groove delimited by the conspicuous, laterally directed tutaculum.

FEMALE.—Total length, 5.83 mm. Integument of carapace dull yellow, the sides dark brown, the median longitudinal light band, which is as broad as the first eye row, somewhat invaded by brown streaks and spots. Eye region white in front, the posterior medians in a brown field. Sternum, labium, and legs dull yellow, infuscated and maculate with black. Legs with a pale dorsal median streak, otherwise heavily marked above in black, lighter beneath. Abdomen light brown, the irregular black markings forming the pattern arranged in the caudal half in indistinct transverse bars, the venter a little lighter.

	CARAPACE	FRONT	STERNUM	LABIUM	ENDITE	ABDOMEN
Length	2.53	.60	1.16	.56	.73	3.40 mm.
Width	2.53	1.56	.96	.40	.33	3.46 mm.



PALPI AND EPIGYNÄ

- Figs. 1. and 2. *Xysticus verecundus*, new species.
- Fig. 3. *Xysticus pretiosus*, new species.
- Fig. 4. *Xysticus quinquepunctatus* Keyserling.
- Fig. 5. *Xysticus variabilis* Keyserling.
- Fig. 6. *Xysticus britcheri*, new species.
- Fig. 7. *Xysticus lassanus* Chamberlin.
- Fig. 8. *Xysticus texanus* Banks.
- Fig. 9. *Xysticus lutulentus*, new species.
- Fig. 10. *Xysticus discursans* Keyserling.
- Fig. 11. *Xysticus hesperus*, new species.
- Fig. 12. *Oxytila okefinokensis*, new species.
- Fig. 13. *Xysticus concursus*, new species.
- Fig. 14. *Xysticus laticeps* Bryant.

Eye rows recurved, the first narrower than the second in the ratio 52: 60. Ratio of the eyes: ALE: AME: PLE: PME = 8: 5: 6.5: 5. Anterior median eyes separated by fully three diameters, half as far from the much larger laterals. Posterior median eyes separated by almost three diameters, a little farther from the lateral (18/15). Median ocular quadrangle as broad in front as behind, broader than long (24/20), the anterior eyes two diameters from the clypeal margin.

Legs as in the male, the fourth very slightly longer than the third, heavily spined, the first two tibiae with 1-2-2-2, the metatarsi with 2-2-2-2 beneath.

	FEMUR	PATELLA	TIBIA	METATARSUS	TARSUS	TOTAL
I	2.33	1.23	1.73	1.60	.90	7.79 mm.
II	2.33	1.23	1.73	1.60	.90	7.79 mm.
III	1.60	.70	1.03	.83	.66	4.82 mm.
IV	1.60	.70	1.13	1.00	.66	5.09 mm.

Ratio of coxae I: II: III: IV = 2.4: 2.4: 2.3: 2.3.

Epigynum as figured.

TYPE LOCALITY.—Male holotype, female allotype, and female paratype from Lake Chapala, Jalisco, Mexico (L. H. Weld, collector), the types in the Cornell collection and the female paratype in the collection of The American Museum of Natural History.

Xysticus quinquepunctatus Keyserling

Figure 4

Xysticus quinquepunctatus KEYSERLING, 1880, 'Die Spinnen Amerikas,' Latrigradae, p. 28, Pl. 1, fig. 12.

MALE.—Total length, 3.80 mm. Cephalothorax provided with the customary long spines in the eye region and on the clypeal margin. Carapace with a broad median longitudinal light band nearly one-third as broad as the carapace, enclosing a V-shaped light maculation that begins at the black marking of the median cephalic suture and runs forward to the eyes. Sides of the carapace dark brown. Sternum creamy white, brown-flecked, the labium and endites darker. Femora, patellae, and a small part of the tibiae of the first two pairs of legs dark brown, the distal joints yellow or light brown, the last two pairs of legs heavily maculate in black and white, the tarsi and metatarsi lighter. Abdomen creamy white above, with three transverse black bands behind and a few basal spots, the venter irrorate in black.

	CARAPACE	FRONT	STERNUM	LABIUM	ENDITE	ABDOMEN
Length	1.86	.53	.86	.33	.50	2.00 mm.
Width	1.86	1.00	.76	.26	.26	2.00 mm.

Eye rows recurved, the first narrower than the second in the ratio 40: 45. Ratio of the eyes: ALE: AME: PLE: PME = 8: 4.5: 5.5: 4. Anterior median eyes separated by two diameters, little more than half as far from the larger laterals. Posterior median eyes separated by two and one-half diameters, three diameters from the laterals. Median ocular quadrangle a little broader than long, almost imperceptibly broader in front than behind (18/17.5). Clypeus scarcely twice as high as the diameter of an anterior median eye.

Legs all heavily spined, the anterior tibiae with 2-2-2-2, the metatarsi with 2-2-2-2 spines beneath.

	FEMUR	PATELLA	TIBIA	METATARSUS	TARSUS	TOTAL
I	1.93	.86	1.40	1.66	.86	6.71 mm.
II	1.93	.86	1.40	1.66	.86	6.71 mm.
III	1.33	.56	.83	.80	.53	4.05 mm.
IV	1.33	.56	.93	.83	.60	4.25 mm.

Ratio of coxae I: II: III: IV = 1.9: 1.8: 1.7: 1.7.

Male palpus closely related to those of *Xysticus cunctator* Thorell and *X. pallidus* Bryant and separable from the latter with some difficulty. The median bulbal apophysis is turned more toward the prolateral margin than in that species and the details of the apical sclerite are slightly different.

FEMALE.—Total length, 5.30 mm. Carapace with a white stripe that is as broad as the first row of eyes, invaded by black dots in the anterior half and with a small black maculation at the median cephalic furrow. Sides of the carapace brown. Sternum, labium and endites white, punctate in black. First three pairs of legs white, regularly punctate in black, the last pair with larger maculations on the femora, patella and tibiae. Abdomen white, with three pairs of very small spots above.

	CARAPACE	FRONT	STERNUM	LABIUM	ENDITE	ABDOMEN
Length	1.80	.60	.83	.33	.50	3.50 mm.
Width	1.73	1.00	.66	.26	.26	3.50 mm.

Eye rows recurved, the first narrower than the second in the ratio 39:45. Ratio of the eyes: ALE:AME:PLE:PME = 7:4:5.5:4. Anterior median eyes separated by a little more than two diameters, half as far from the larger laterals. Posterior median eyes separated by little over two diameters, scarcely three diameters from the laterals. Median ocular quadrangle broader than long (9/8) as broad behind as in front. Clypeus as high as twice the diameter of an anterior median eye.

The anterior two legs with 1-2-2-2 spines beneath the tibiae and 2-2-2-2 beneath the metatarsi.

	FEMUR	PATELLA	TIBIA	METATARSUS	TARSUS	TOTAL
I	1.60	.76	1.06	1.06	.66	5.14 mm.
II	1.60	.76	1.06	1.06	.66	5.14 mm.
III	1.00	.60	.66	.60	.50	3.36 mm.
IV	1.00	.60	.83	.73	.60	3.76 mm.

Ratio of coxae I: II: III: IV = 1.8: 1.7: 1.5: 1.5.

LOCALITIES.—Elsinore, Utah (Clear Creek Canyon) (male and female), June 15, 1930 (Gertsch); Claremont, California (males); Castleford, Idaho (female); Monroe Canyon, Utah (female); Montpelier, Idaho (male); Medicine Hat, Alberta (females).

Xysticus canadensis, new name

Oxyptila cinerea EMERTON, 1892, Trans. Connecticut Acad. Arts and Sci., VIII, p. 366, Pl. xxix, fig. 6 (not *X. cinereus* C. L. Koch, 1837; not *Thomisus cinereus* Blackwall, 1861).

Xysticus pretiosus, new species

Figure 3

MALE.—Total length, 3.30 mm. Carapace with a median longitudinal light stripe, about a third as wide as the carapace, that is narrowed somewhat at the cephalic suture and encloses the characteristic creamy white V-shaped maculation, the broad band anteriorly much invaded by light-brown markings. Sides of the carapace brown but with much of the lighter integumental color showing through. Sternum heavily maculate with reddish brown, the labium and endites lighter. Femora of legs heavily marmorate with reddish brown, the distal joints yellowish, the distal joints of the last two pairs of legs irregularly maculate. Abdomen dark reddish-brown, with three broken transverse black bands in the caudal half.

	CARAPACE	FRONT	STERNUM	LABIUM	ENDITE	ABDOMEN
Length	1.80	.50	.80	.30	.46	1.93 mm.
Width	1.73	1.00	.60	.20	.20	1.80 mm.

Eye rows recurved, the first narrower than the second in the ratio 38: 42. Ratio of the eyes: ALE: AME: PLE: PME = 8.5: 5: 6: 5.5. Anterior median eyes separated by one and one-half diameters, half as far from the larger laterals. Posterior median eyes separated by about one and one-half diameters, slightly more than two diameters from the laterals. Median ocular quadrangle very slightly longer than broad, the eyes subequal. Clypeus scarcely twice as high as the diameter of an anterior median eye.

Legs heavily spinose, the anterior tibiae with 1-2-2-2, the metatarsi with 2-2-2 spines beneath.

	FEMUR	PATELLA	TIBIA	METATARSUS	TARSUS	TOTAL
I	1.66	.70	1.33	1.20	.80	5.69 mm.
II	1.66	.70	1.33	1.20	.80	5.69 mm.
III	1.26	.50	.86	.66	.63	3.91 mm.
IV	1.33	.50	.90	.83	.66	4.22 mm.

Ratio of coxae I: II: III: IV = 1.6: 1.6: 1.4: 1.5.

The palpus is immediately separable from all other American species by the anterior position of the bulbal apophyses. The species is somewhat reminiscent of *Xysticus auctificus* Keyserling but is easily separated by the palpi and color characteristics.

TYPE LOCALITY.—Male holotype from Forest Grove, Clear Co., California, August. Male paratypes from near Roseberg, Oregon, August 30, 1931 (W. Ivie), Terrace, British Columbia, July 1931 (W. Hippishley, collector). The holotype is in the collection of The American Museum of Natural History.

Xysticus hesperus, new species

Figure 11

MALE.—Total length, 5.00 mm. Cephalothorax heavily spinose throughout, the spines of the eye region and clypeal margin much longer and more robust. Carapace dark reddish-brown on the sides, the median longitudinal pale band yellowish and about as wide as the interval between the anterior lateral eyes. Sternum, labium and endites dark reddish-brown. Tarsi and metatarsi of the legs yellow, the

basal joints dark reddish-brown, with a few lighter integumental markings showing through. Abdomen dark reddish-brown above, caudally with transverse black bars, white on the sides, the venter brown.

	CARAPACE	FRONT	STERNUM	LABIUM	ENDITE	ABDOMEN
Length	2.33	.56	1.13	.46	.70	2.76 mm.
Width	2.43	1.33	1.00	.40	.33	2.33 mm.

Eye rows recurved, the first narrower than the second in the ratio 48: 54. Ratio of the eyes: ALE: AME: PLE: PME = 9: 4: 6: 4. Anterior median eyes separated by about three diameters, half as far from the larger laterals. Posterior median eyes separated by about three diameters, a little farther from the laterals. Median ocular quadrangle broader than long (21/17) approximately equal in width before and behind, the anterior medians about two diameters from the clypeal margin.

Legs heavily spinose, the anterior tibiae and metatarsi with 2-2-2-2 spines beneath.

	FEMUR	PATELLA	TIBIA	METATARSUS	TARSUS	TOTAL
I	2.00	1.13	1.56	1.70	.96	7.35 mm.
II	2.00	1.13	1.56	1.70	.96	7.35 mm.
III	1.33	.76	1.00	.93	.66	4.68 mm.
IV	1.33	.76	1.00	.93	.66	4.68 mm.

Ratio of coxae I: II: III: IV = 2.3: 2.2: 2.0: 2.0.

Palpus practically identical with that of *Xysticus montanensis* Keyserling, of which this may be only a giant race. The bulb is without the conspicuous apophyses that are present in most of the species of the genus. The female is 6.70 mm. long and agrees in structural characteristics with the male and with the female of *montanensis*. In Keyserling's description of *discursans* two species are confused, the male which is to be regarded as the type of that species and a female that is either identical with *hesperus* or possibly *triangulosus* Emerton.

TYPE LOCALITY.—Male holotype from Atherton, California, female allotype from Los Angeles, California. Female paratypes from Claremont, California, Santa Cruz Island, California, Salt Lake City, Utah, and Ferron, Utah. Male and female paratypes from Corvallis, Oregon, December. Types in the collection of The American Museum of Natural History.

Xysticus peninsulaus, new species

MALE.—Total length, 3.66 mm. Carapace pure black except for a median and narrower lateral brownish streaks caudally, the eye region with a broken, transverse light line between the eye rows. Sternum light brown, sparsely punctate in black, the labium, endites, and first coxae black, the third and fourth coxae light brown and with a round black marking near the base. Femora, patellae and base of tibiae of first two pairs of legs black, the distal joints progressively lighter, the last two legs light brown and sparsely marked with black spots. Abdomen dark brown to black and showing transverse black bands caudally that are margined in white, the venter paler.

	CARAPACE	FRONT	STERNUM	LABIUM	ENDITE	ABDOMEN
Length	2.00	.43	.86	.36	.53	1.83 mm.
Width	1.83	1.10	.66	.30	.30	1.50 mm.

Eye rows recurved, the first narrower than the second in the ratio 47: 52. Ratio of the eyes: ALE: AME: PLE: PME = 7: 4.5: 6: 4.5. Anterior median eyes separated by two and one-half diameters, half as far from the laterals. Posterior median eyes separated by about three diameters, the same distance from the laterals. Median ocular quadrangle much broader than long (21/12), the anterior median eye little more than a diameter from the clypeal margin.

Legs heavily spinose, the anterior tibiae 2-2-2-2 beneath (the first proximal spines single under the first leg), the metatarsi 2-2-2 beneath.

	FEMUR	PATELLA	TIBIA	METATARSUS	TARSUS	TOTAL
I	1.73	.83	1.33	1.26	.76	5.91 mm.
II	1.73	.83	1.33	1.26	.76	5.91 mm.
III	1.06	.53	.73	.56	.43	3.31 mm.
IV	1.06	.53	.76	.63	.43	3.41 mm.

Male palpus practically identical with that of *Xysticus acquiescens* Emerton but differing in the shorter, lower apophysis on the bulb. Emerton's species, however, has a much higher clypeus, is correspondingly higher throughout the carapace, and has the medium ocular quadrangle narrower in front. The spines on *acquiescens* are also quite different, being 2-2-2-2 beneath the metatarsi and 2-2-2-2 beneath the tibiae.

TYPE LOCALITY.—Male holotype from Punta Gorda, Florida, in the collection of The American Museum of Natural History.

Xysticus lutulentus, new species

Figure 9

FEMALE.—Total length, 5.83 mm. Cephalothorax provided with many short spines throughout, the clypeal margin with longer ones. Carapace dark brown on the sides and provided with a median longitudinal light stripe as broad as the interval between the lateral eyes of the first row, the band anteriorly much invaded by brown markings. Sternum light, the labium, endites, and coxae brown with white markings. Legs lightest distally, the basal joints with light and dark streaks above, the femora marmorate in white and black. Abdomen cleared, showing no pattern.

	CARAPACE	FRONT	STERNUM	LABIUM	ENDITE	ABDOMEN
Length	2.60	.63	1.06	.50	.76	3.33 mm.
Width	2.60	1.56	1.00	.33	.33	3.33 mm.

Eye rows recurved, the first narrower than the second in the ratio 44: 55. Ratio of eyes: ALE: AME: PLE: PME = 7.5: 5: 6: 5. Anterior median eyes separated by two diameters, little more than half as far from the laterals. Posterior median eyes separated by two diameters, scarcely three diameters from the laterals. Median ocular quadrangle as broad as long, equilateral. Clypeus twice as high as the diameter of an anterior median eye.

Legs heavily spinose, the first tibia with 1-2-2-2 spines beneath, the second with 2-2-2, the metatarsi with 2-2-2-2 beneath.

	FEMUR	PATELLA	TIBIA	METATARSUS	TARSUS	TOTAL
I	2.43	1.26	1.86	1.80	.93	8.28 mm.
II	2.43	1.26	1.86	1.80	.93	8.28 mm.
III	1.66	.73	1.00	1.00	.56	4.95 mm.
IV	1.66	.76	1.26	1.16	.70	5.54 mm.

Epigynum about as broad as long, completely lacking the median septum characteristic of many species. The figure is sufficient to distinguish it from all other known American species.

TYPE LOCALITY.—Female holotype from Tillamook County, Oregon, August, 1932 (R. W. Macy, collector), deposited in the collection of The American Museum of Natural History.

Two females of this species are in the collection of the Museum of Comparative Zoölogy that are labelled *Xysticus borealis* Keyserling. A study of Keyserling's description seems to show that there is no good basis for such a disposition, in spite of the fact that they are from Alaska and resemble superficially the species in question.

Xysticus concursus, new species

Figure 13

FEMALE.—Total length, 5.40 mm. Carapace gray to white, with a well-marked median longitudinal light band as wide as the first eye row, that is invaded by a large central gray maculation. Sides and clypeus brown. Integument of the legs nearly white, over which is superimposed a heavy covering of tiny gray spots and flecks. Abdomen gray, with transverse light bands made up of white spots.

	CARAPACE	FRONT	STERNUM	LABIUM	ENDITE	ABDOMEN
Length	2.37	.80	1.00	.43	.54	3.62 mm.
Width	2.50	1.42	.75	.30	.32	4.00 mm.

Eye rows recurved, the first narrower than the second in the ratio 47: 60. Ratio of the eyes: ALE: AME: PLE: PME = 8: 5: 6: 5. Anterior median eyes separated by two and one-half times their diameter, five-eighths as far from the laterals. Eyes of the posterior row equidistantly spaced. Median ocular quadrangle slightly broader than long (6/5), narrower in front in the same ratio. Clypeus twice as high as the diameter of an anterior median eye.

The first two pairs of legs equal in length, the last two approximately so, the first two tibiae with 2-2-2 spines beneath, the metatarsi with 2-2-2-2.

	FEMUR	PATELLA	TIBIA	METATARSUS	TARSUS	TOTAL
I	2.80	1.26	1.66	1.66	.87	8.25 mm.
II	2.80	1.26	1.66	1.66	.87	8.25 mm.
III	1.46	.76	.90	.90	.56	4.58 mm.
IV	1.60	.76	1.13	1.10	.66	5.25 mm.

Epigynum as figured.

TYPE LOCALITY.—Female holotype from Edinburgh, Texas, collected by Mr. Stanley Mulaik and deposited in the collection of The American Museum of Natural History through his generosity.

This small species resembles *Xysticus gulosus* Keyserling and *X. ontariensis* Emerton in structure and coloration. In addition to the obviously different epigynum as a basis for its separation from these forms, *X. concursus* has only three pairs of spines beneath the first tibia.

***Xysticus britcheri*, new species**

Figure 6

FEMALE.—Total length, 5.00 mm. Carapace light brown to gray, with lateral brown bands and a median longitudinal light stripe in which are three white streaks. Under side of the carapace light brown, irregularly flecked with red. Legs light brown, with median and lateral creamy white narrow longitudinal stripes on the femora, patellae and tibiae, the femora with a pale stripe beneath. Abdomen light brown, with white side bands and a median broader light stripe, caudally with three white bands.

	CARAPACE	FRONT	STERNUM	LABIUM	ENDITE	ABDOMEN
Length	2.33	.66	1.16	.46	.66	3.33 mm.
Width	2.16	1.40	.76	.33	.33	3.00 mm.

Eye rows recurved, the first narrower than the second in the ratio 37: 43. Ratio of the eyes: ALE: AME: PLE: PME = 10: 5: 7: 5. Anterior median eyes about twice as far from each other as their distance to the laterals. Eyes of the posterior row equidistantly spaced. Median ocular quadrangle slightly broader than long (23/21), narrowed in front in the same ratio. Clypeus equal in height to two diameters of an anterior median eye, armed on the margin with nine robust spines.

First two pairs of legs equal in length, the tibia of the first with 2-2-2-2 spines beneath, the second 2-2-2-2, the metatarsi with 2-2-2-2 beneath.

	FEMUR	PATELLA	TIBIA	METATARSUS	TARSUS	TOTAL
I	2.90	1.56	2.16	2.10	1.00	9.72 mm.
II	2.90	1.56	2.16	2.10	1.00	9.72 mm.
III	2.06	1.06	1.30	1.06	.76	6.25 mm.
IV	2.26	1.06	1.50	1.26	.80	6.88 mm.

Epigynum characterized by the presence of a pair of heavily sclerotized, black, tubular ridges that are nearly as long as and almost completely fill the atrial cavity.

TYPE LOCALITY.—Female holotype from Onondaga County, November 3 (Britcher collection).

This species is apparently related to such forms as *Xysticus acquiescens* Emerton, *X. cinereus* Emerton and others in which the atrial cavity is prominently ridged. It differs from the species enumerated above in being more elongate and less flattened. The size and position of the tubular ridges in the atrium of the genital organ are characteristic.

***Xysticus auctificus* Keyserling**

Xysticus auctificus KEYSERLING, 1880, 'Die Spinnen Amerikas,' Laterigradae, p. 25, Pl. I, fig. 10.

Xysticus trimaculatus BRYANT, 1933, Bull. Mus. Comp. Zool., LXXIV, pp. 179-180, Pl. II, figs. 12 and 13.

This fine species is found in several of the midwestern and southern states, where it appears not to be uncommon. It was described from Colorado and is often cited as a typical western form. However, I have never seen a specimen from the region west of Colorado.

Xysticus cunctator Thorell

Xysticus cunctator THORELL, 1877, Bull. U. S. Geol. Survey, III, p. 494.

Xysticus lenis KEYSERLING, 1880, 'Die Spinnen Amerikas,' Laterigradae, p. 27, Pl. 1, fig. 11.

Xysticus californicus KEYSERLING, 1880, 'Die Spinnen Amerikas,' Laterigradae, p. 37, Pl. 1, fig. 17.

Xysticus ancistrophor CHAMBERLIN AND GERTSCH, 1929, Pomona College Jour. Ent. and Zoöl., XXI, pp. 4-5, fig. 10.

This is the commonest western species of *Xysticus*. It has also been reported from several states east of the Rocky Mountains. The records from Florida, however, are almost certainly erroneous. Structurally it is closely allied to *X. ferox* (Hentz), *X. banksi* Bryant and *X. quinquepunctatus* Keyserling.

Xysticus funestus Keyserling

Xysticus funestus KEYSERLING, 1880, 'Die Spinnen Amerikas,' Laterigradae, p. 10, Pl. 1, fig. 2.

Xysticus brunneus BANKS, 1892, Proc. Acad. Nat. Sci., Philadelphia, p. 53, Pl. III, fig. 4.

Xysticus crudelis BANKS, 1892, idem, p. 53, Pl. III, fig. 5.

Xysticus nervosus BANKS, 1892, idem, p. 55, Pl. III, fig. 8, Pl. IV, fig. 84.

Xysticus discursans Keyserling

Figure 10

Xysticus discursans KEYSERLING, 1880, 'Die Spinnen Amerikas,' Laterigradae, p. 20, Pl. 1, fig. 7 (not female).

Xysticus vernalis BRYANT, 1930, Psyche, XXXVII, p. 139, figs. 13 and 15.

Xysticus ferox (Hentz)

Thomisus ferox HENTZ, 1847, Jour. Boston Soc. Nat. Hist., V, p. 445, Pl. xxiii, fig. 3.

Xysticus stomachosus KEYSERLING, 1880, 'Die Spinnen Amerikas,' Laterigradae, p. 7, Pl. 1, fig. 1.

Xysticus distinctus BANKS, 1892, Proc. Acad. Nat. Sci., Philadelphia, p. 52, Pl. III, fig. 89.

Xysticus transversus BANKS, 1892, idem, p. 54, Pl. III, fig. 6.

Xysticus punctatus Keyserling

Xysticus punctatus Keyserling, 1880, 'Die Spinnen Amerikas,' Laterigradae, p. 30, Pl. 1, fig. 13.

Xysticus formosus BANKS, 1892, Proc. Acad. Nat. Sci., Philadelphia, p. 56, Pl. III, fig. 9.

Xysticus emertoni Keyserling

Xysticus emertoni KEYSERLING, 1880, 'Die Spinnen Amerikas,' Laterigradae, p. 39, Pl. I, fig. 18.

Xysticus limbatus KEYSERLING, 1880, idem, p. 35, Pl. I, fig. 16 (not female).

The female of *X. limbatus* Keyserling, as heretofore regarded by most American authors, belongs with *X. elegans* Keyserling. Emerton correctly matched the two sexes in his paper on New England Thomisidae. I synonymize the name *limbatus* with *elegans* because the female was described first and should be regarded as the type of the species. *Xysticus emertoni* is a very widely distributed species. It is rather uncommon in the United States but seems to be abundant in Canada.

Xysticus elegans Keyserling

Xysticus elegans KEYSERLING, 1880, 'Die Spinnen Amerikas,' Laterigradae, p. 31, Pl. I, fig. 14 (not female).

Xysticus limbatus KEYSERLING, 1880, idem, p. 35, Pl. I, fig. 16 (not male).

Xysticus pulverulentus Emerton

Xysticus pulverulentus EMERTON, 1894, Trans. Connecticut Acad. Arts and Sci., IX, p. 417, Pl. IV, fig. 6.

This species was incorrectly synonymized with *X. montanensis* Keyserling. It is a common species in Canada and I have seen specimens from Minnesota, Utah, and Wyoming in the United States. It belongs in that section of the genus in which the bulb of the male palpus is devoid of apophyses.

Xysticus deichmanni Sorensen

Xysticus deichmanni SORENSEN, 1898, Vidensk. Meddelelser, p. 228.

Xysticus bimaculatus EMERTON, 1894, Trans. Connecticut Acad. Arts and Sci., IX, p. 416, Pl. IV, fig. 5 (name preoccupied).

Xysticus benefactor Keyserling

Xysticus benefactor KEYSERLING, 1880, 'Die Spinnen Amerikas,' Laterigradae, p. 22, Pl. I, fig. 8.

Xysticus vernilis KEYSERLING, 1881, Verh. k. k. zool.-bot. Gesell., Wien, p. 304, Pl. XI, fig. 23.

Xysticus orizaba Banks

Xysticus orizaba BANKS, 1898, Proc. California Acad. Sci., I, p. 260, Pl. XVI, fig. 6.

Xysticus paetus GERTSCH, 1933, Amer. Mus. Novit., No. 593, pp. 17-19, figs. 16 and 20.

A comparison of *X. paetus* with cotypes of Bank's *orizaba*, deposited in the collection of the Museum of Comparative Zoölogy,

shows that both are identical. The species was first described from Mexico. It is fairly common in the southwestern states and has been taken as far north as Idaho.

Xysticus lassanus Chamberlin

Figure 7

Xysticus lassanu CHAMBERLIN, 1925, Bull. Mus. Comp. Zoöl., LXVII, p. 218.

Xysticus simplicior CHAMBERLIN AND GERTSCH, 1929, Pomona College Jour. Ent. and Zoöl., XXI, p. 5, Pl. I, fig. 10.

X. lassanu Chamberlin was based on a partly digested specimen taken from the stomach of a toad. A female that probably belongs with the male comes from near Carlsbad Cave, New Mexico. A figure of the epigynum is given. A prominent lobe projects into the atrium from the caudal margin as in *Xysticus variabilis* Keyserling.

Xysticus variabilis Keyserling

Figure 5

Xysticus variabilis KEYSERLING, 1880, 'Die Spinnen Amerikas,' Laterigradae, p. 40, Pl. I, fig. 19.

Xysticus texanus Banks

Figure 8

Xysticus texanus BANKS, 1904, Jour. New York Ent. Soc., XII, p. 112.

Xysticus laticeps Bryant

Figure 14

Xysticus laticeps BRYANT, 1933, Bull. Mus. Comp. Zoöl., LXXIV, pp. 178-179, Pl. III, fig. 25.

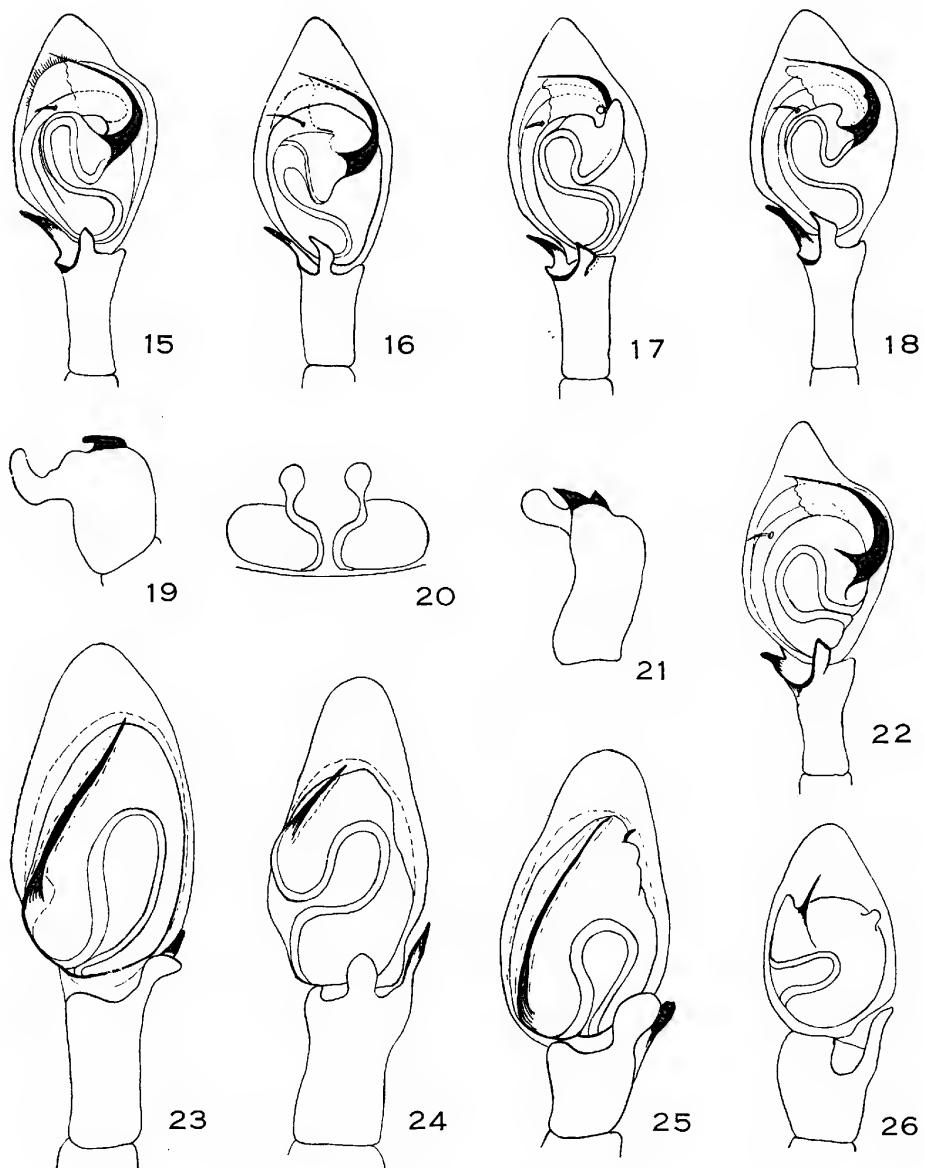
OXYPTILA Simon

Oxyptila okefinokensis, new species

FEMALE.—Total length, 4.66 mm. Carapace dark brown, medially lightened to form a broad, longitudinal, reddish-brown stripe that is constricted at the position of the median cephalic suture, the margins with a lighter band. Clypeus yellow. Sternum black, light brown on the margins, the mouth parts and coxae yellow but maculate in black. Integument of the legs yellow, irregularly marked with large black maculations. Abdomen almost black, with a pale median basal stripe and a few lighter spots, the venter lighter. Abdomen provided with clavate spines.

	CARAPACE	FRONT	STERNUM	LABIUM	ENDITE	ABDOMEN
Length	2.20	.50	1.05	.50	.75	2.50 mm.
Width	2.30	1.27	.87	.35	.30	2.75 mm.

Eye rows recurved, the first narrower than the second in the ratio 40:47. Ratio of the eyes: ALE:AME:PLE:PME = 7:3:5:4. Anterior median eyes scarcely twice as far apart as their distance to the laterals. Posterior median eyes much nearer each other than the laterals (10/15). Median ocular quadrangle broader than



PALPI AND EPIGYNNA

- Fig. 15. *Philodromus californicus* Keyserling.
- Fig. 16. *Philodromus barrowsi*, new species.
- Fig. 17. *Philodromus wyomingensis*, new species.
- Fig. 18. *Philodromus expositus* Keyserling.
- Fig. 19. *Philodromus mediocris*, new species (tibia).
- Fig. 20. *Philodromus anomalus*, new species.
- Fig. 21. *Philodromus speciosus*, new species (tibia).
- Fig. 22. *Philodromus keyserlingi* Marx.
- Fig. 23. *Philodromus speciosus*, new species.
- Fig. 24. *Philodromus josemitensis*, new species.
- Fig. 25. *Philodromus peninsulanus*, new species.
- Fig. 26. *Philodromus anomalus*, new species.

long (15/13), very slightly broader in front, the anterior medians slightly smaller and placed two and one-half diameters from the clypeal margin. Eye area with several clavate spines, two in the median quadrangle, one between the lateral eyes, one immediately behind and other smaller ones on the sides. Clypeal margin with nine toothed spines, the central one clavate and directed upward.

First femur as long as the carapace, the patella and tibia slightly longer (5/4). First tibia with 1-2-2-2 long spines beneath and with two intermediate pairs of smaller ones, the second tibia with 2-2-2. Metatarsi of the first two pairs of legs with four pairs of ventral spines. First metatarsus with a single lateral spine.

Epigynum as figured.

TYPE LOCALITY.—Female holotype from Billy's Island, Okefenokee Swamp, Georgia, June, 1912 (Crosby), in the collection of Cornell University.

This interesting species partakes of the characters of both *Oxyptila* and *Xysticus*. In typical *Oxyptila* the median eye quadrangle is much longer than broad and the spines are as follows: 2-2 beneath the first two tibiae, 2-2-2 beneath the metatarsi, and a single lateral on the first metatarsus. The median eye quadrangle of *O. okefinokensis* is slightly broader than long and the number of spines beneath the tibiae and metatarsi is exceeded for typical *Oxyptila*. These characters are more or less constantly characteristic of *Xysticus*. However, the general aspect of the spider and the epigynum show that it should be placed in *Oxyptila*.

PARASYNAEMA F. Cambridge

The following two species are congeneric with *Parasynaema cirripes* (O. P. Cambridge), a common Mexican form that no doubt will be found in our extreme southwestern States. A third, undescribed species is known from Florida by a badly damaged male.

Parasynaema pictilis (Banks)

Misumena pictilis BANKS, 1896, Jour. New York Ent. Soc., IV, p. 91.

Parasynaema viridans (Banks)

Misumena viridans BANKS, 1893, Trans. Amer. Ent. Soc., XXIII, p. 71.

APOLLOPHANES F. Cambridge

Apollophanes texanus (Banks)

Apollophanes texanus BANKS, 1904, Jour. New York Ent. Soc., XII, p. 113, Pl. v, fig. 12, Pl. vi, fig. 20.

Philodromus syntheticus CHAMBERLIN, 1925, Proc. California Acad. Sci., XIV, 124, figs. 33 and 36.

Philodromus agamus CHAMBERLIN, 1928, Proc. Biol. Soc. Washington, VI, p. 182.

Philodromus crenifer CHAMBERLIN, 1928, idem, pp. 181-182 (not female type).

TITANEBO Gertsch***Titanebo californicus*** Gertsch

Titanebo californicus GERTSCH, 1933, Amer. Mus. Novit., No. 636, p. 14, fig. 12.

Ebo inquisitor BRYANT, 1933, Bull. Mus. Comp. Zoöl., LXXIV, p. 186, Pl. II, fig. 16, Pl. III, fig. 30 (not *P. inquisitor* Thorell).

PHILODROMUS Walckenaer***Philodromus infuscatus*** Keyserling

Philodromus infuscatus KEYSERLING, 1880, 'Die Spinnen Amerikas,' Laterigrae, p. 222, Pl. v, fig. 122.

Philodromus unicolor BANKS, 1892, Proc. Acad. Nat. Sci., Philadelphia, p. 61, Pl. III, fig. 22.

Philodromus macrotarsus EMERTON, 1917, Canadian Ent. XLIX, p. 271, fig. 22 (1 and 2).

Philodromus utus CHAMBERLIN, 1921, Canadian Ent., LIII, pp. 245-246, fig. 6.

***Philodromus anomalus*, new species**

Figures 20 and 26

MALE.—Total length, 2.75 mm. Carapace bright yellowish-brown, lightened just behind the eyes by a triangular creamy maculation. Sternum white, the mouth parts, coxae and legs bright yellow in color and without markings. Abdomen concolorous with the dorsum of the carapace, sparingly flecked in white, the venter nearly white.

	CARAPACE	FRONT	STERNUM	LABIUM	ENDITE	ABDOMEN
Length	1.10	.30	.70	.12	.22	1.75 mm.
Width	1.10	.50	.62	.12	.13	1.12 mm.

Eyes of the first row narrower than the second in the ratio 17: 24. Eye rows recurved, the anterior medians twice as far apart as their distance to the subequal laterals and only two-thirds of a diameter from the laterals. Eyes of the posterior row subequal, the medians scarcely twice as far apart as their distance to the laterals. Median ocular quadrangle broader than long (12/8), wider behind in the same ratio. Clypeus twice as high as the diameter of an anterior median eye.

Sternum slightly longer than broad, truncate behind, separating the posterior coxae by their width. Abdomen pointed behind, the sides subparallel for two-thirds the length. First two tibiae with two pairs of spines beneath, the normal distals lacking, the first two metatarsi, 2-2-2. Femur of the last leg equal in length to the carapace. Palpus as figured.

FEMALE.—Total length, 3.25 mm. Color and structure as in the male, the abdomen proportionately broader. Epigynum as figured.

	CARAPACE	FRONT	STERNUM	LABIUM	ENDITE	ABDOMEN
Length	1.35	.30	.75	.17	.30	2.20 mm.
Width	1.35	.55	.67	.17	.19	1.75 mm.

TYPE LOCALITY.—Male holotype, female allotype, and immature female paratypes from Scottsdale, Arizona, January 29, 1903 (Britcher collection).

This species is closely related to *Philodromus infuscatus* Keyserling and *Philodromoides pratariae* Scheffer in structural characters. The male of the last named form is unknown but its palpus will surely be of the unusual type as found in *infuscatus* and *anomalous*. The presence of five pairs of spines beneath the first two tibiae in *Philodromoides* is not deemed of great importance from a generic standpoint. Berland and Fage have recently synonymized it with *Philodromus*, a disposition with which no fault can be found.

Philodromus barrowsi, new species

Figure 16

MALE.—Total length, 5.20 mm. Integument of the carapace gray, the sides light brown, the light median longitudinal stripe about as wide as the width of the last eye row, its margins uneven, and which encloses a median light-brown streak that runs the length of the carapace. Sternum, labium, and endites white, pointed with black spots. Legs gray to bluish gray, a little darker beneath, the femora with a narrow white stripe on the dorsal surface. Abdomen gray, with a brown basal hastate maculation that runs half the length of the dorsum, laterad of which are paired brown spots, caudally coalesced into a band.

Carapace, 2.23 mm. long, 2.16 mm. wide, .83 mm. in front.

Eye rows recurved, the first narrower than the second in the ratio 27: 40. Eyes of the first row subequal, the medians separated by a diameter, half as far from the laterals. Posterior median eyes two and one-half diameters apart, about half as far from the slightly larger laterals. Median ocular quadrangle broader than long (20/16), two-thirds as broad in front as behind, the eyes subequal. Clypeus as high as the median ocular quadrangle.

Legs 2143, the anterior tibiae with 2-2-2, the metatarsi with 2-2 spines beneath.

	FEMUR	PATELLA	TIBIA	METATARSUS	TARSUS	TOTAL
I	3.73	1.23	3.33	3.23	1.73	13.25 mm.
II	4.50	1.46	4.33	4.00	2.13	16.42 mm.
III	3.53	1.10	2.93	2.86	1.33	11.75 mm.
IV	3.53	1.10	2.93	3.00	1.46	12.02 mm.

Male palpus closely related to the many species in the *pernix* group. Tibia with a ventral short lobed apophysis, its sclerotized margin connecting it with a heavier retrolateral apophysis that is weakly bifurcate. The eye relations and color characteristics are sufficient to separate it from *P. hoples* Chamberlin, *P. pernix* Blackwall and related species and races.

FEMALE.—Total length, 6.65 mm. Carapace, 2.56 mm. long, 2.50 mm. wide, 1.06 mm. in front. Agreeing well with the male in color, the chief difference being in the caudal markings of the abdomen, banded in the male, the spots distinct and separate in the female. Legs proportionately shorter, the second femur less than twice as long as the carapace (2.56/4.00). Epigynum much as in *pernix* and *hoples*.

TYPE LOCALITY.—Male holotype, female allotype and paratypes from Macon, Georgia, male and female paratypes from Gainesville,

Florida, February and March (Wm. M. Barrows). Also known from Texas and other southern states. The types are in the collection of The American Museum of Natural History.

Philodromus wyomingensis, new species

Figure 17

MALE.—Total length, 4.66 mm. Carapace, 2.00 mm. long, 1.90 mm. wide, .66 mm. in front. Color and structure as in *P. californicus* Keyserling, *P. pernix* Blackwall and other species of the same group. Specific differences, however, are most apparent in the palpus, which is described in detail.

Tibia of palpus as long as the bulbal parts, provided laterally with a bifid apophysis, the superior process of which is much longer than in the inferior, the interval between rounded. The species is obviously close to *P. expositus* Keyserling in the details of the superior apophysis, but can be separated by differences in the details of the bulb. The median bulbal parts more elevated than in that species, the tube hidden partially by a sclerotized process much shorter and finer than in *expositus*. Cymbium more gently rounded on the prolateral margin, not expanded as in some species. Visible portion of the seminal canal originating near the inferior tibial process, strongly looped at the middle of the bulb, and from there entering the embolic portion.

TYPE LOCALITY.—Male holotype from Slough Creek, Yellowstone National Park, Wyoming, July 11, 1930 (W. E. Gertsch, collector), deposited in the collection of The American Museum of Natural History. A male paratype in the Britcher collection is probably from Scottsdale, Arizona.

Philodromus keyserlingi Marx

Figure 22

Philodromus obscurus KEYSERLING, 1883, Verh. k. k. zool.-bot. Gesell., Wien, XXXIII, p. 675, Pl. xxi, fig. 23 (not *P. obscurus* Blackwall).

Philodromus keyserlingi MARX, 1889, Proc. U. S. Nat. Mus., XII, p. 559.

Philodromus washita BANKS, 1932, Pub. University Oklahoma, Biol. Survey, IV, No. 1, p. 28, figs. 1 and 2.

Philodromus expositus Keyserling

Figure 18

Philodromus expositus KEYSERLING, 1880, 'Die Spinnen Amerikas,' Laterigradae, p. 220, Pl. v, fig. 121.

Philodromus signifer BANKS, 1892, Proc. Acad. Nat. Sci., Philadelphia, p. 59, Pl. III, fig. 20.

Philodromus californicus Keyserling

Figure 15

Philodromus californicus KEYSERLING, 1883, Verh. k. k. zool.-bot. Gesell., Wien, XXXIII, p. 676, Pl. xxi, fig. 24.

Philodromus hoples CHAMBERLIN, 1928, Proc. Biol. Soc. Washington, XLI, p. 181.

Philodromus virescens Thorell

Philodromus virescens THORELL, 1877, Bull. U. S. Geol. Survey, III, p. 500.

Philodromus clarus KEYSERLING, 1880, 'Die Spinnen Amerikas,' Laterigradae, p. 214, Pl. v, fig. 117.

Philodromus crenifer CHAMBERLIN, 1928, Proc. Biol. Soc. Washington, XLJ, pp. 181-182 (female type, not male).

Philodromus alascensis Keyserling

Philodromus inquisitor THORELL, 1877, Bull. U. S. Geol. Survey, III, p. 502 (not *P. inquisitor* (Walckenaer)).

?*Philodromus lentiginosus* KEYSERLING, 1881, Verh. k. k. zool.-bot. Gesell., Wien, XXXI, p. 312, Pl. xi, fig. 29.

Philodromus alascensis KEYSERLING, 1883, idem, XXXIII, p. 674, Pl. xxi, fig. 22.

Philodromus thorelli MARX, 1889, Proc. U. S. Nat. Mus., XII, p. 559 (not *P. thorelli* Cambridge).

Philodromus varians KULCZYNKI, 1908, Mém. de l'Acad. Impériale des sci. de St.-Pétersbourg, VIII Série, XVIII, No. 7, pp. 57-61, Pl. i, figs. 71-74, 77, 78, and 80.

Philodromus ubiquitor MELLO-LEITAO, 1929, Archivos do Mus. nac. Rio de Janeiro, p. 270.

Ebo oblongus BRYANT, 1933, Bull. Mus. Comp. Zoöl., LXXIV, pp. 188-189, Pl. iii, fig. 23 (not *E. oblongus* Simon).

This interesting *Philodromus* was first described by Thorell in 1877 as *inquisitor*, a name preoccupied by Walckenaer in 1837. Probably the next eligible name is *lentiginosus* Keyserling, but as the type of that species, originally deposited in the collection of the Museum of Comparative Zoölogy, apparently has been lost, I have queried it and used *alascensis* Keyserling. Keyserling's original label for *lentiginosus*, which was described from the Lake Superior region, is still extant but the only specimen in the vial is an immature *Tibellus*. Two new names have been proposed to supplant *inquisitor*, but as the earlier synonymy was not clearly understood at that time, they become synonyms. In 1908 Kulczynski redescribed the species from Siberia as *Philodromus varians* and gave good figures of the palpus and epigynum. The superficial resemblance between *P. alascensis* and species of the genus *Titanebo* led to the identification by Bryant of a female from Auburn, Alabama, as *Ebo oblongus* Simon. The range of the species is extensive. It is found throughout most of Canada, the northern part of the Mississippi basin, all the region west of the Rocky Mountains, Alaska, and Siberia. It apparently has never been taken on the eastern seaboard and there is only one record from the southern states.

***Philodromus marxi* Keyserling**

Philodromus marxi KEYSERLING, 1889, Verh. k. k. zool.-bot. Gesell., Wien, XXXIII, p. 677, Pl. xxi, fig. 25.

Philodromus ornatus BANKS, 1892, Proc. Acad. Nat. Sci. Philadelphia, p. 61, Pl. iii, fig. 24 (name preoccupied).

Philodromus minusculus BANKS, 1892, idem, p 63, Pl. ii, fig. 39.

Philodromus banksii MELLO-LEITAO, 1929, Archivos do Museo Nacional, Rio de Janeiro, p. 267.

***Philodromus imbecillus* Keyserling**

Philodromus imbecillus KEYSERLING, 1880, 'Die Spinnen Amerikas,' Laterigradae, p. 224, Pl. v, fig. 123.

Philodromus lineatus EMERTON, 1892, Trans. Connecticut Academy Arts and Sci., VIII, p. 374, Pl. xxxi, fig. 4.

Philodromus carolinus BANKS, 1911, Proc. Acad. Nat. Sci. Philadelphia, p. 452, Pl. xxxv, figs. 14 and 16.

***Philodromus mediocris*, new species**

Figure 19

MALE.—Total length, 2.80 mm. Cephalothorax provided with a sparse covering of gray hairs that are best represented on the margins, and a few weak spines in the ocular region. Carapace light brown in the middle, the sides somewhat darker, the median band very poorly defined. Labium, endites, and sternum creamy white in color, the latter with a submarginal line of black dots. Legs light yellowish-brown, the basal joints with a prolateral and retrolateral brown stripe. Abdomen light reddish-brown, the sides somewhat darker, the venter creamy white.

	CARAPACE	FRONT	STERNUM	LABIUM	ENDITE	ABDOMEN
Length	1.33	.36	.73	.16	.30	1.60 mm.
Width	1.28	.50	.66	.20	.20	1.00 mm.

Eye rows recurved, the first narrower than the second in the ratio 22: 30. Ratio of the eyes: ALE: AME: PLE: PME = 2.5: 2.5: 3: 2.5. Anterior median eyes separated by scarcely three diameters, about half as far from the laterals. Posterior median eye separated by six diameters, about two diameters from the larger laterals. Median ocular quadrangle much broader than long(19/10), greatly narrowed in front in the same ratio, the eyes subequal. Clypeus as high as the median quadrangle, a little more than three times the diameter of an anterior median eye.

Legs 2143, the first tibia with 2-2-2, the metatarsus with 2-2 spines beneath. The first femur slightly longer than the carapace, the second half again as long, the last two femora about equal to it in length.

Femur of male palpus longer than the patella and tibia together, about equal to the tarsus in length. Tibia with two apophyses, a colorless ventral lobe that expands distally and lies on the margin of the bulb, and a retrolateral sclerotized spur that is basally very broad and has a short prong directed ventrad.

TYPE LOCALITY.—Male holotype from Lake City, Florida, and male paratype from Gainesville, Florida, February 27, 1927 (Wm. H. Bar-

rows), the holotype in the collection of The American Museum of Natural History.

Philodromus satullus Keyserling

Philodromus satullus KEYSERLING, 1880, 'Die Spinnen Amerikas,' Laterigradae, p. 211, Pl. v, fig. 116.

Philodromus minutus BANKS, 1892, Proc. Acad. Nat. Sci. Philadelphia, p. 62, Pl. vi, fig. 85.

Philodromus brevis EMERTON, 1892, Trans. Connecticut Acad. Arts and Sci., VIII, p. 375, Pl. xxxii, fig. 2.

Philodromus deceptus, new species

MALE.—Total length, 2.65 mm. Carapace dark brown on the sides, medially with a very broad longitudinal light band that is as wide as the first row of eyes, the clypeus and most of the area of the eyes light brown. Sternum very light, the labium, endites, and coxae a little darker. Legs irregularly marked with large brown maculations. Abdomen dark brown, provided basally with a lighter hastate marking that is outlined in white. Venter dirty white.

	CARAPACE	FRONT	STERNUM	LABIUM	ENDITE	ABDOMEN
Length	1.22	.20	.65	.20	.25	1.48 mm.
Width	1.17	.55	.57	.17	.17	.95 mm.

The first row of eyes recurved, narrower than the second in the ratio 21:30, the eyes subequal, the medians separated by two and one-half diameters, nearer the laterals (4/6). Second row of eyes less recurved, the medians widely separated and much nearer the larger laterals (5/12), than each other. Median ocular quadrangle much broader than long (16/10), narrower in front in the same ratio, the eyes subequal. Clypeus equal to seven-tenths the height of the median quadrangle.

Legs 2143, the first tibia with 2-2-2 spines beneath, the metatarsus with two pairs. The first femur is about as long as the carapace (1.25 mm./1.22 mm.), the last tibia and patella shorter (1.05 mm./1.22 mm.).

Male palpus very close to that of *Philodromus satullus* Keyserling (synonym *minutus* Banks), the difference in the lateral tibial apophysis being mainly one of size. This process is less than half as long in *deceptus* and placed much nearer the cymbium. The embolus is a strong black spur half as long as the bulbal apparatus and lies in a moderately excavated fold near the distal end. The course of the seminal canal is very much as in *satullus*. The cymbium is as long as the tibia and patella taken together.

TYPE LOCALITY.—Male holotype from Gainesville, Florida, February 27, 1927 (W. M. Barrows, collector) deposited in the collection of The American Museum of Natural History through the courtesy of Dr. Barrows.

This species falls in the same group with *Philodromus satullus* Keyserling, *inaequipes* Banks and others in which the median eyes of the second row are widely separated. Efforts to connect this species with

several different females from Florida were not satisfactory and for the present the species is known only from the male sex.

Philodromus peninsulanus, new species

Figure 25

MALE.—Total length, 3.00 mm. Carapace yellowish brown throughout, the sparse covering of hair black, inconspicuous. Sternum somewhat lighter, completely lacking hairs or spines. Legs and palpi concolorous with the carapace, inconspicuously punctate in black, provided with weak spines and black hairs. Dorsum of abdomen lighter than the carapace, lacking any signs of a darker pattern, the venter light.

	CARAPACE	FRONT	STERNUM	LABIUM	ENDITE	ABDOMEN
Length	1.37	.28	.90	.19	.33	1.80 mm.
Width	1.30	.60	.70	.20	.25	.85 mm.

Eye rows recurved, the first narrower than the second in the ratio 20:30. Ratio of the eyes: ALE:AME:PLE:PME = 2.5:2.5:3:2.5. Anterior median eyes separated by two diameters, about half as far from the equal laterals. Posterior median eyes separated by about five diameters, half as far from the larger laterals. Median ocular quadrangle much broader than long (17/9), greatly narrowed in front in the same ratio, subequal. Clypeus two-thirds as high as the median quadrangle.

Legs 2143, the first tibia with 2-2-2 spines beneath, the metatarsus with two pairs. The first femur clearly longer than the carapace (1.65/1.37), the last two femora slightly longer (1.50/1.37).

Tibia of male palpus with the conventional apophyses, a flat, colorless ventral lobe that is rounded distally and a dark spur on the retrolateral margin that ends in a fine point. Embolus a slender spine originating near the base of the cymbium on the inner side and lying close to the bulb for its full length, parallel to the course of the seminal duct.

TYPE LOCALITY.—Male holotype from Cocoa, Florida, December 23, 1925, deposited in the collection of The American Museum of Natural History through the generosity of Dr. W. M. Barrows who collected the species.

Although closely related to *Philodromus ornatus* and *placidus*, this small species can immediately be separated from them by the comparative ratios of the ocular quadrangle. In both the former species the quadrangle is somewhat broader than long (14/9) but in *peninsulanus* it is decidedly broader, in the ratio 17:9. The tibial apophysis is equivalent in length and shape to that of *P. placidus*.

Philodromus speciosus, new species

Figures 21 and 23

MALE.—Total length, 2.80 mm. Carapace dark brown on the sides, medially with a very light whitish band as wide as the eye rows and ending at the caudal margin, the sides parallel. Clypeus dark brown. Sternum creamy white, the abrium, endites and coxae dirty gray. Legs yellow, most of the joints with proximal

and distal annulae, the femora infuscated. Abdomen with a basal hastate brown marking above, around which is a large white field; black beyond the middle, caudally again whitened, the venter white with two side stripes.

	CARAPACE	FRONT	STERNUM	LABIUM	ENDITE	ABDOMEN
Length	1.26	.26	.80	.16	.30	1.60 mm.
Width	1.26	.60	.77	.16	.16	1.00 mm.

Eye rows recurved, the first narrower than the second in the ratio 17: 25. Ratio of the eyes: ALE: AME: PLE: PME = 3: 3: 3.5: 3. Anterior median eyes separated by scarcely a diameter, less than half as far from the laterals. Posterior median eyes separated by about two diameters, nearly as far from the slightly larger laterals. Median ocular quadrangle slightly broader than long (12/10), much narrower in front, the eyes subequal. Clypeus as high as twice the diameter of an anterior median eye.

Legs 2143, the anterior tibiae and metatarsi with 2-2 spines beneath, the normal distals completely lacking or very small.

	FEMUR	PATELLA	TIBIA	METATARSUS	TARSUS	TOTAL
I	2.16	.66	2.06	1.86	1.13	7.87 mm.
II	2.50	.66	2.43	2.33	1.30	9.22 mm.
III	1.66	.53	1.53	1.46	.80	5.98 mm.
IV	1.80	.53	1.53	1.46	.80	6.12 mm.

Ratio of coxae I: II: III: IV = 1.4: 1.4: 1.4: 1.7.

Femur of male palpus a little longer than the patella and tibia taken together. Tibia with two processes as in *Philodromus exilis* Banks, the ventral a colorless rounded lobe that projects slightly over the bulbal margin, the retrolateral apophysis considerably broader than in *exilis* and shallowly notched, the forks asymmetrical. Bulb little expanded, the tube originating near the middle on the prolateral side of the bulb and ending at the distal bulbal margin.

FEMALE.—Total length, 4.00 mm. Pattern and color of this sex agreeing exactly with the male. Legs proportionately a little shorter. Other structural characteristics of the carapace and the relations of the eyes very similar. Abdomen, as usual, much larger. Epigynum identical with that organ in *Philodromus imbecillus* Keyserling.

TYPE LOCALITY.—Male holotype and female allotype from Montpelier, Idaho, July 1930 (Gertsch); male paratypes from Yellowstone National Park, Wyoming, August 1931 (Walter E. Gertsch); male and female paratypes from Los Angeles, California (G. Grant); female and immature male paratypes from Salt Lake City, Utah, July-August 1931 (Gertsch). Types in the collection of The American Museum of Natural History.

Philodromus josemitensis, new species

Figure 24

MALE.—Total length, 3.00 mm. Carapace black, with a narrow median longitudinal band that is divided anteriorly into three streaks, the median one going forward between the anterior median eyes, the lateral ones ending at the posterior lateral eyes. Clypeus margined in white. Legs all black, indistinctly annulate distally.

Abdomen nearly black, showing no lighter color above or below. A male paratype is probably more representative of the normal color form of the species, and has a conspicuous broad median white band on the carapace, the sides being light reddish-brown. The abdomen is considerably lighter, also, its basal color being light brown. The integument of the legs is light yellow and the joints are conspicuously annulate in black.

Carapace, 1.26 mm. long, 1.33 mm. wide, .50 mm. in front.

Eye rows recurved, the first narrower than the second in the ratio 16: 25. Eyes of the first row subequal, the medians separated by a little more than a diameter, half as far from the laterals. Posterior median eyes separated by scarcely three diameters, five-eighths as far from the equal laterals. Median ocular quadrangle slightly broader than long, considerably broader behind, the eyes subequal. Clypeus as high as the height of the median quadrangle.

Legs 2143, the second femur about twice as long as the carapace, the spines rather feeble, the first and second tibiae with 2-2-2, the metatarsi with 2-2 beneath.

	FEMUR	PATELLA	TIBIA	METATARSUS	TARSUS	TOTAL
I	1.86	.56	1.80	1.66	.93	6.81 mm.
II	2.33	.76	2.16	2.06	1.06	8.37 mm.
III	1.80	.56	1.46	1.33	.66	5.81 mm.
IV	1.70	.46	1.33	1.33	.66	5.48 mm.

Femur of palpus slightly longer than the patella and tibia taken together, which are about equal in length to the tarsus. Tibia with two apophyses, a subventral colorless rounded lobe that projects over the cymbium near the outer side and a retrolateral slender spur that is as long as the other but acutely ended. Embolus a strong spine that originates halfway up the prolateral margin of the bulb and ends at the bulbal apex.

TYPE LOCALITY.—Male holotype from Yosemite National Park, California (Sternitzky), and male paratype from Stanford University environs, California (J. C. Chamberlin, collector), the paratype deposited in the collection of the University of Utah, the holotype in the collection of The American Museum of Natural History.

Philodromus lutulentus, new species

MALE.—Total length, 3.62 mm. Carapace light brown throughout, clothed with a few iridescent scales and inconspicuous short black hairs, spines present only on the clypeal margin and at the sides of the pars thoracica. Sternum dirty white, the coxae, labium and endites yellow, concolorous with the integument of the appendages, which are sparsely marked with small brown spots and dark streaks above. Dorsum of abdomen light brown, darker medially, the sides of the posterior half lighter, the venter dirty white.

	CARAPACE	FRONT	STERNUM	LABIUM	ENDITE	ABDOMEN
Length	1.70	.50	.95	.20	.40	2.00 mm.
Width	1.70	.60	.85	.23	.30	1.40 mm.

Eye rows recurved, the first narrower than the second in the ratio 27: 36. Eyes of the first row subequal, the medians separated from each other by two diameters,

about half as far from the laterals. Second row of eyes less recurved, the medians four diameters apart, half as far from the slightly larger laterals. Median ocular quadrangle much broader than long (20/12), narrower in front in the same ratio, the eyes subequal. Clypeus as high as the median ocular quadrangle.

Legs 2143, the first femur slightly longer than the carapace, the second femur considerably longer, the first tibiae with 2-2-2 spines beneath, the metatarsi with two pairs.

Femur of the male palpus slightly longer than the patella and tibia, which two joints are longer than the tarsus. Tibia with two apophyses as in *Philodromus robustus* Emerton, a lateral spur and a much shorter ventral process. Bulbal parts nearly round, the embolus a stout spine free from the bulb at the base on the pro-lateral side and curved around the periphery to the distal end. Course of the seminal duct much as in *robustus*.

TYPE LOCALITY.—Male holotype from Atlanta, Georgia, May, 1899, collected by J. H. Emerton and given to The American Museum of Natural History by Dr. W. M. Barrows of Ohio State University.

I have compared this interesting species with the type of *Philodromus robustus* Emerton and find that the two are distinct. In this connection it may be hazarded that *robustus* is the male of *P. laticeps* Keyserling, but more material is necessary to decide this point. Both of the species have been taken in New England, each known by only one sex.

***Philodromus mineri* Gertsch**

Philodromus mineri GERTSCH, 1933 (June 15), Amer. Mus. Novit., No. 636, pp. 14-15, Fig. 21.

Philodromus emertoni BRYANT, 1933 (June), Bull. Mus. of Comp. Zoöl., LXXIV, pp. 184-185, Pl. II, figs. 17, 22, Pl. III, fig. 34.

***Tibellomimus lineatus* Gertsch**

Tibellomimus lineatus GERTSCH, 1933 (June 15), Amer. Mus. Novit., No. 636, p. 9.

Philodromus bilineatus BRYANT, 1933 (June), Bull. Mus. of Comp. Zool., LXXIV, pp. 181-182, Pl. II, figs. 14-19, Pl. III, fig. 29.

The male of this species, unknown at the time of the description of *Tibellomimus*, agrees well with the female structurally and differs from typical *Philodromus* in the marginal position of the eyes on the greatly flattened carapace, which is much longer than wide. The palpus resembles species of *Philodromus* very closely, and if it should prove necessary ultimately to refer the species to this genus, the specific name *bilineatus* must be used, for *lineatus* is preoccupied by Emerton.

